

## CLAIMS

What is claimed is:

1. A method of providing word-level flow control in a communication system using a secondary communication channel, comprising:  
  
    establishing a bi-directional communications link between a first system and a second system,  
  
    transmitting a frame of data from said first system to said second system; and  
  
    suspending the transmission of the frame of data without waiting for the end of the frame when the first system receives a stop transmission request embedded in a secondary communication channel between the second system and the first system.
2. The method of claim 1, wherein the embedded link data comprises a data word having a reversed running disparity.
3. The method of claim 1, wherein the embedded link data comprises a data word having alternative coding.
4. The method of claim 1, wherein the secondary communication channel comprises start and stop packet codes.
5. The method of claim 1, wherein the secondary communication channel comprises start/stop symbols.
6. The method of claim 1, wherein the transmission is suspended at the end of a word within a frame.
7. The method of claim 1, wherein embedding flow control data in a secondary communication channel of the communications link from the second system to the first system.

8. The method of claim 1, further comprising resuming transmission of the frame with the next word following the receipt of a start transmission code embedded in the secondary communication channel.
9. The method of claim 8, wherein the secondary communication channel is formed from groups of enhanced coded data words occurring at regular intervals in a data frame.
10. The method of claim 8, wherein the secondary communication channel is formed from individual enhanced coded data words appearing at regular intervals in a data frame.
11. The method of claim 8, wherein the secondary communication channel comprises multiple coded symbols.
12. The method of claim 1, wherein the communications link has at least two lanes.
13. The method of claim 1, wherein the communications link has four lanes.
14. The method of claim 1, wherein the embedded flow control data is embedded in a secondary communication channel using a combination of two symbols.
15. The method of claim 1, wherein the communications link conducts flow control without using a special flow control message that is not contained within normal data frames.
16. The method of claim 1, further comprising the step of embedding flow control data in a secondary communication channel of the communications link from the second system to the first system.
17. A method of providing flow control in a communication system comprising:  
  
establishing a bi-direction communications link with a remote system; and  
  
embedding flow control data in a secondary communication channel of the communications link for use by a primary communication channel of the communications link.

18. The method of claim 17, wherein the embedded flow control data comprises a data word having a reversed running disparity.
19. The method of claim 17, wherein the embedded flow control data comprises a data word having alternative coding.
20. The method of claim 17, wherein the secondary communication channel comprises start and stop packet codes.
21. The method of claim 17, wherein the secondary communication channel comprises start/stop symbols.
22. The method of claim 17, wherein the transmission is suspended at the end of a word within a frame.
23. The method of claim 17, wherein flow control data is embedded in a secondary communication channel of the communications link from the second system to the first system.
24. The method of claim 17, further comprising resuming transmission of the frame with the next word following the receipt of a start transmission code embedded in the secondary communication channel.
25. The method of claim 24, wherein the secondary communication channel is formed from groups of enhanced coded data words occurring at regular intervals in a data frame.
26. The method of claim 24, wherein the secondary communication channel is formed from individual enhanced coded data words appearing at regular intervals in a data frame.
27. The method of claim 24, wherein the secondary communication channel comprises multiple coded symbols.
28. The method of claim 17, wherein the communications link has at least two lanes.

29. The method of claim 17, wherein the communications link has four lanes.
30. The method of claim 17, wherein the embedded flow control data is embedded in a secondary communication channel using a combination of two symbols.
31. The method of claim 17, wherein the communications link conducts flow control without using a special flow control message that is not contained within normal data frames.
32. A system providing word-level flow control comprising:  
  
a controller operably coupled to a full-duplex communication link; wherein said controller includes an encoder that encodes a secondary channel, and a decoder that decodes a received communication channel, wherein said secondary communications channel includes word level coding, and said system stops transmission of data without waiting for the end of a packet in response to word level commands received on said secondary communication channel.
33. The system of claim 32, where the word level command is based on reversed running disparity coding.
34. The system of claim 32, wherein the word level command is constructed from a series of alternatively coded words.